

AN ASSESSMENT OF SOCIAL INFRASTRUCTURE IN EAST ZONE OF SURAT CITY

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Abstract - The social Infrastructure refers to the fundamental facilities and systems serving a country, city, or area including the services and facilities necessary for its economy to function. The quality, efficiency, and productivity of the infrastructure affect the quality of life; health, and livability of the society. The present levels of urban infrastructure are quite inadequate to meet the demand of the existing urban population. The project is intended towards the development of basic social amenities to people in the terms of social infrastructure such as fire stations, hospitals, and educational institutes. Existing social infrastructure has compared with the necessity concerning standard guidelines for infrastructure. Planning proposal may also prepare based on gap analysis of infrastructure. Quality upgradation of life of people may improve directly and people may satisfy with upgradation of infrastructure from the future point of view.

Keywords: Accessibility, Quality of life, Social Infrastructure, Urban area, Surat City

I. INTRODUCTION

Infrastructure is one the most important facilities when it is about the development of the city. An assessment and survey of the particular areas in the terms of infrastructure are most important. Based on that assessment gap analysis can be determined in infrastructure. Observation and study of the zone in Surat city made lacking in the social infrastructure. In many places, people do not have better accessibility to educational as well as health care institute.

II. STUDY AREA PROFILE

Surat city is formally established on the bank of the Tapi River. In the beginning, the activities were concentrated within the inner wall which was constructed in the year 1664 A.D. Presently Surat city divided into a total of 7 Zones. Surat city is situated at latitude 21° 12'N and longitude 72° 52'E on the bank of river Tapi having a coastline of Arabian Sea on its West. It is 13m above mean sea level. It is located in the well-developed south Gujarat region. East zone has maximum population among the rest of the zone and it has high population density. The city registered an annualized GDP growth rate of 11.5 percent over the seven fiscal years between 2001 and 2008, according to data compiled by the economic research firm Indices Analytics.

Table1: Year-Wise Population of Surat City

| Year | 1991 | 2001 | 2011 |
|------------|----------|----------|-----------|
| Population | 1,49,881 | 2,24,338 | 44,66,826 |

(Source: Census of India, 2011)

By decentralizing various public services being provided by Surat Municipal Corporation Zonal systems have been implemented. The whole Surat city has been divided into 7 zones.

Table2: Demographic Profile of Surat City

| Zone | Population | Density (Sq. Km) | Decade Growth Rate (%) |
|-------------|----------------|------------------|------------------------|
| Central | 408760 | 49971 | -1.18 |
| South West | 347447 | 3105 | 43.30 |
| South | 695028 | 11253 | 70.36 |
| South East | 748304 | 38390 | 88.37 |
| East | 1137138 | 30303 | 59.82 |
| North | 705163 | 19392 | 69.36 |
| West | 424986 | 8288 | 48.00 |

(Sources: Surat Municipal Corporation)

III. DATA COLLECTION

Data is collected of existing social infrastructure in East zone of Surat city such as numbers of the educational building available in East zone of the city, numbers of beds available in various hospitals, range of fire stations, and a number of police stations available in East zone of Surat city. All the data was collected from the Surat municipal corporation (Surat Municipal Corporation) office and by fieldwork in the concerned study area. The location of data is taken from Google earth (Google Earth) and by fieldwork. Social infrastructure includes the following facilities as per Urban and Regional Development Plans Formulation and Implementation (India G. o., 2015) and (India M. o., 2005) guidelines:

- Educational facilities

- Healthcare facilities
- Police
- Fire Safety

Table 3: Existing Numbers of Educational Facilities

| Sr. No. | Places | Existing | | |
|---------|---------------|-------------|---------|-----------|
| | | Pre-primary | Primary | Secondary |
| 1 | Magob | 7 | 8 | 5 |
| 2 | Puna | 8 | 11 | 10 |
| 3 | Sarthana | 4 | 3 | 3 |
| 4 | Simada | 5 | 8 | 5 |
| 5 | Umarwada | 3 | 4 | 3 |
| 6 | Ashwini Kumar | 4 | 4 | 4 |
| 7 | Karanj | 2 | 6 | 4 |
| 8 | Mota Varachha | 8 | 7 | 8 |
| 9 | Nana Varachha | 8 | 12 | 10 |
| 10 | Kapodra | 2 | 3 | 2 |

(Sources: Field Work)

Table 4: Existing number of Health care facilities

| Name of Places | Name of Hospitals | Numbers of beds |
|----------------|--|-----------------|
| Kapodara | P.P.Savani Heart Institute & Multispecialty Hospital | 26+10 |
| | Vedant hospital | 21 |
| | Patel Hospital | 20 |
| Puna | Samarpan General hospital | 23 |
| | Yashoda Surgical Hospital & Nursing Home | 22+10 |
| | Megh Child Hospital | 22 |
| | Jyoti women's hospital | 26 |
| Sarthana | Patel Hospital and Health Centre | 20 |
| | Sai Deep hospital | 22 |
| | Kalrav Hospital | 15 |
| | Dharmanand hospital | 25 |
| | Arogyam hospital | 18 |
| | Floral women hospital | 12 |
| Simada | The women | 15 |
| | Madhav Children Hospital | 21 |
| | Italiya multispecialty hospital | 25 |

| | | |
|----------|--|-----------|
| Varachha | G B vaghani | 50 |
| | The Mother Hospital and Maternity Home | 19 |
| | Surat Diamond Hospital. | 125+12+16 |
| | Shrihari | 13 |
| | Smit hospital & infirmary centre | 18 |
| | ABC Children | 40 |
| | Shrihari children hospital | 30 |
| | Shyamubha | 20 |
| Umarwada | Smimer hospital | 775+191 |
| | Cure and care hospital | 24 |
| Magob | Unity hospital | 50 |
| | Ashtha hospital | 14 |
| | Krishna hospital | 28+10 |

(Sources: Field Work)

Table 5: Existing Numbers of Police Station

| Name of the Places | Name of the Police station | Nearest Area | Distance in Km |
|--------------------|--------------------------------------|--------------|----------------|
| Kapodra | Kapodra Police Station | - | - |
| Puna | Punagam Police Chowki | - | - |
| Sarthana | Sarthana Police Station | - | - |
| Simada | Sarthana Police Station | Sarthana | 0.4 |
| Mota Varachha | Varachha Police Station | - | - |
| Nana Varachha | Nana Varachha Police Station | - | - |
| Fulpada | Fulpada police station | - | - |
| Umarwada | Keshavnagar Police Chowki Model Town | Dumbhal | 3 |
| Magob | Puna Police Station | Puna | 0.7 |
| Karanj | Fulpada police station | Fulpada | 3.1 |

(Sources: Field Work & Google Earth)

Table 6: Standard Guidelines for Educational Facilities

| Sr. No. | Category | Numbers of student | Population served per unit area |
|---------|---|--------------------|---------------------------------|
| 1 | Pre Primary, Nursery School | - | 2500 |
| 2 | Primary School (class I to V) | 500 | 5000 (NBC, 2005) |
| 3 | Senior Secondary The school (VI to XII) | 1000 | 7500 |

(Sources: URDPFI/NBC 2005)

Table 7: Norms for Healthcare Facilities

| Sr. no. | Category | Numbers of bed | Population served per unit area |
|---------|--------------------------|--|---------------------------------|
| 1 | Multi-Specialty Hospital | 200 beds Initially the provision maybe for 100 beds | 1 Lakh |
| 2 | General Hospital | 500 Initially the provision maybe for 300 beds | 2.5 lakh |
| 3 | Intermediate Hospital | 80 beds Initially maybe for 50 beds including 20 maternity beds | 1 lakh |

(Sources: URDPFI/NBC 2005)

IV. ANALYSIS OF OTHER INFRASTRUCTURE

According to the norms, fire station should cover in the range of between 3 to 5 km buffer range in a residential area and less than that for industrial area and commercial area. Proximity analysis may help to understand the lacking of the fire station. Social infrastructure such as Educational buildings, healthcare facilities, and police stations may assess based on the population lives in a particular area. Social infrastructure such as fire station may assess based on distance.

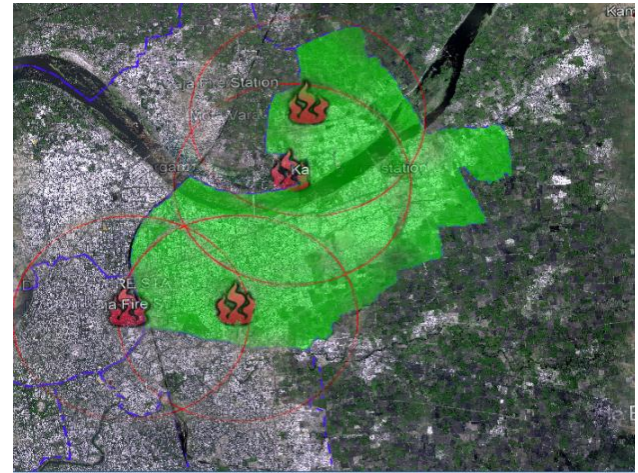


Figure 1: Analysis for a Fire Station

The figure indicates the existing fire station in the East zone of Surat city. A buffer zone is about 3km to analyze the fire station in the East zone.

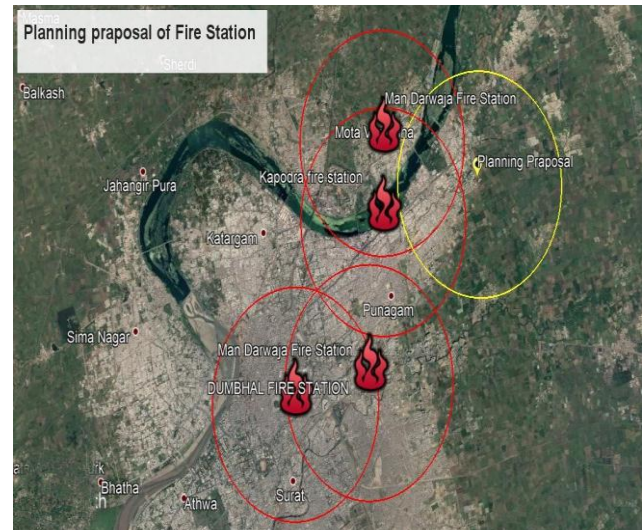


Figure 2: Lacking area in Existing Numbers of the Fire Station

The area which is covered in the yellow circle indicates the lacking of the existing available fire stations.

V. CONCLUSION

Development of any urban area dependent upon their current population and future planning of area depends upon their population projection for next 10 years as per URDPFI guideline.

SMC estimates population by the constant growth rate of Surat city. Surat city is not having this kind of strategy every zone/ every area having a different population. Many of the infrastructures have lacked as compared to the standard given by the guidelines. Lacking the infrastructure may affect the quality of life of people. Lacking the infrastructure also affects the accessibility of infrastructure to the people. Planning proposals may also

prepare to fulfill the lacking of the infrastructure in a better way that also may improve people satisfaction. There is an allotment guideline of 5 % land of total T.P. Scheme for social infrastructure only. However, there is a need to improve the percentage of physical and social infrastructure and also consider URDPFI/NBC guidelines.

VI. SCOPE OF WORK

- This work limited to the East zone of Surat city
- Proposed study limited to the Social Infrastructure only
- The study considered only four (4) social facilities

References

1. Google Earth. (n.d.). Retrieved from Google Earth: https://www.google.com/intl/en_in/earth/
2. India, G. o. (2015). Urban and Regional Development Plans Formulation and Implementation. Ministry of Urban Development, India.
3. India, M. o. (2005). National Building Code. Bureau of Indian Standards.
4. Surat Municipal Corporation. (n.d.). Retrieved from SMC: www.suratmunicipal.gov.in